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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/183,694 10/30/98 ELLIS

J 98-179

EXAMINER

024319 TM21/0924
LSI Logic Corporation
1551 McCarthy Blvd.
M/S: D-106 Patent Department
Milpitas CA 95035

PARK, I
ART UNIT

PAPER NUMBER

2182
DATE MAILED:

09/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/183,694

Applicant(s)

ELLIS ET AL.

Examiner

Ilwoo Park

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 17.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Applicant's amendment filed on 7/30/2001 in response to Examiner's Office Action has been reviewed. Claims 1-3 and 12 are amended and claim 4 is canceled. The following rejections now apply.
2. Claims 1-3 and 5-20 are presented for examination.
3. Garrett et al., Bean et al., Krakirian, and Ellis et al. were cited as prior art in the last office action.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrett et al., US patent No. 6,049,842 and Bean et al., US patent No. 4,543,626.
6. Applicant's arguments filed 7/30/2001 for claims 1 and 5-11 have been fully considered but they are not persuasive. As to claim 1, Bean et al further teach each of transfer extend entries generated by the data controller comprises a pointer (queue link pointer 52; col. 5, lines 26-42) to a next transfer extend entry.

Therefore, the rejections for claims 1 and 5-11 are respectfully maintained for the reasons as set forth above and in the last office action.

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Olson et al., US patent No. 6,199,121.

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As to claim 1, Olson et al teach a data controller (interface unit 154 in fig. 1B) of a peripheral device having a storage medium, the data controller comprising:

a transfer extend generator that generates (col. 7, lines 24-48) transfer extend entries for a data transfer between the storage medium and a host computer, each of said transfer extend entries comprising a pointer to a next transfer extend entry (col. 7, lines 49-52); and

at least one retrieval channel coupled to receive the transfer extend entries for programming the data transfer (col. 8, lines 48-53).

8. Applicant's arguments with respect to claims 2, 3, and 12-20 have been considered but are moot in view of the new ground(s) of rejection.

9. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al., US patent No. 6,029,226 in view of Krakirian, US patent No. 5,781,803.

As to claim 2, Ellis et al teach a data controller (col. 4, lines 38-58) of a peripheral device having a storage medium and a processor, wherein the data controller minimizes (col. 7, lines 1-3) interrupts to the processor by coalescing a plurality of commands (col. 6, lines 17-33; col. 6, lines 63-66) received from a host computer if a logical block address of a received command is sequential to a logical block address of a current command. However, Ellis et al do not disclose reordering a plurality of commands received from a host computer from an order of arrival into an order of sequence in the storage medium.

Krakirian teaches a peripheral device having a storage medium, a processor (microprocessor 206) and a data controller (hard disk controller 204 in fig. 3) re-ordering (col.

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15, lines 13-28) a plurality of commands received from a host computer from an order of arrival into an order of sequence in the storage medium.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Ellis et al and Krakirian because they both teach a SCSI bus 2 (Ellis et al: col. 1, lines 35-44; Krakirian: col. 15, lines 14-17) receiving a burst of commands from a host for data transfer and the Krakirian's teaching of re-ordering a plurality of commands received from a host computer from an order of arrival into an order of sequence in the storage medium would increase possibility in coalescing a plurality of commands of Ellis et al.

As to claim 12, Ellis et al teach a command queuing engine configured to arrange the plurality of commands into at least one thread (col. 6, lines 17-33).

10. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al., US patent No. 6,029,226 and Krakirian, US patent No. 5,781,803 as applied to claim 12 above, and further in view of Bean et al., US patent No. 4,543,626.

As to claims 13-15, Bean et al teach the limitations of the claimed invention (see the last office action).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Ellis et al, Krakirian, and Bean et al because they both teach receiving and processing host commands for a data transfer between the host and the local memory and the Bean et al's teaching of the command queuing engine generating transfer extend entries for host commands would increase efficiency of the Ellis et al and Krakirian's microprocessor.

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11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 3 and 16-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. A command queuing engine creating a plurality of threads of sequential command simultaneously in claim 3 is not supported by the specification (see the interview summary attached).

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Young (US patent No. 5,923,896: col. 15, lines 26-28) teaches creating a plurality of threads of commands simultaneously.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

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will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication should be directed to Ilwoo Park, whose telephone number is (703) 308-7811 or via e-mail, *ilwoo.park@uspto.gov*. The Examiner can normally be reached Monday through Friday from 9:00 AM to 5:0 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Thomas C. Lee, can be reached at (703) 305-9717.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 308-9051 (for formal communications intended for entry)

or: (703) 305-3718 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Ilwoo Park
Ilwoo Park

September 20, 2001

Thomas Lee
THOMAS LEE
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